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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/056,647	01/22/2002	Ravi Prasad	10015567-1	9854

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Intellectual Property Administration

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EXAMINER

NECKEL, ALEXA DOROSHENK

ART UNIT

PAPER NUMBER

1764

DATE MAILED: 05/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/056,647

Applicant(s)

PRASAD ET AL.

Examiner

Alexa D. Neckel

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 March 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9,12-15,18-35 and 53-62 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9,12-15,18-35 and 53-62 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 1-9, 12-15, 18-35 and 53-62 continue to be rejected under 35 U.S.C. 103(a) as being unpatentable over Hockaday et al. (2001/0045364) in view of Matkovich et al. (5,070,899).

Hockaday et al., in Fig. 9, discloses a fuel reservoir (7, 39), a reaction chamber (122), an open region (111) defined as a tubular member, and a flow resisting structure within the open region (110, 112), wherein the fuel containing substance within the fuel reservoir comprises sodium borohydride (abstract), wherein the reaction chamber comprises an inlet operably connected to the fuel reservoir and a gas outlet (Fig. 9). The cartridge further comprising a byproduct reservoir (7, 39) including a liquid inlet (Fig. 9) and a substantially gas permeable/liquid impermeable structure (106) separating the reaction chamber liquid outlet from the reaction chamber gas outlet. Wherein the passive structure creates capillary forces that resist fluid flow. The reaction chamber further comprising catalyst (Fig. 9).

Hockaday et al., in Fig. 3, further discloses a fuel reservoir (7, 39), a reaction chamber (Fig. 3) including a catalyst, wherein the fuel containing substance within the fuel reservoir comprises sodium borohydride (abstract), wherein the reaction chamber comprises an inlet operably connected to the fuel reservoir and a gas outlet (Fig. 3).

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The cartridge further comprising a byproduct reservoir (7, 39) including a liquid inlet operably connected to a liquid outlet of the reaction chamber (Fig. 3). The reaction chamber comprises an external housing (38) and a substantially gas permeable/liquid impermeable structure (31-32) forming a structure in which catalyst is at least partially located, wherein a space (36) is defined between the inner surface of the reaction chamber external housing and the outer surface of the enclosed substantially gas permeable/liquid impermeable structure the is in communication with the reaction chamber gas outlet (37).

Hockaday et al. fails to disclose where the flow resisting structure within the open region (110, 112) is a passive and porous structure, but rather discloses a valve.

Matkovich et al. teaches a valve which permits flow in one direction and prevents flow in the opposite direction, thus eliminating backflow (col. 1, lines 8-11 and lines 39-40) via first and second porous (as well as static or passive) elements (col. 1, lines 60-64). It would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the general valve (110) of Hockaday et al. with the check valve of Matkovich et al. in order to prevent backflow and yet still allow the desired fluid to flow to the reaction chamber.

With regard to the recitation of a second reactant in claims 31-35, it is noted that the material worked upon does not limit an apparatus claim. MPEP 2115.

Response to Arguments

Claims 1-9 and 53

Applicant argues that the valve of Matkovich cannot prevent fluid flow and would destroy the reference of Hockaday.

The examiner respectfully disagrees as Matkovich recites that their valve presents flow (col. 1, lines 8-11).

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the knowledge generally available to one of ordinary skill in the art provides for the motivation to substitute functionally equivalent structures, such as one valve for another. Additionally, Hockday fails to provide for any specific design requirements for the valve (110) which would also motivate one of ordinary skill in the art to look to other known valve devices which would have a reasonable expectation of success.

Claims 12-15 and 54

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon

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hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). In this instance, Hockday fails to provide for any specific design requirements for the valve (110) which would also motivate one of ordinary skill in the art to look to other known valve devices which would have a reasonable expectation of success.

Claims 18-21

Applicant again argues that the valve of Matkovich cannot prevent fluid flow and would destroy the reference of Hockaday.

The examiner respectfully disagrees as Matkovich recites that their valve presents flow (col. 1, lines 8-11).

Claims 22-30

Applicant has requested clarification for the reaction chamber's liquid outlet that is not in fluid communication with the fuel reservoir.

It is the examiner's position that the outlet labeled with an arrow and H₂ at the top of figure 9 would be an outlet with which liquid could leave the reaction chamber (122) without communicating with the fuel reservoir (7). An outlet is an outlet, regardless of what is flowing through it. The manner of operating a device does not differentiate an apparatus claim from the prior art. A recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed

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apparatus from a prior art apparatus if the prior art apparatus teaches all the structure limitations of the claim. See MPEP 2114.

Claims 31-35

Applicants have requested clarification as to what corresponds to the “first reactant inlet”, “liquid outlet”, “gas outlet”, and “substantially gas permeable/substantially liquid impermeable structure... separates the first reactant inlet and the liquid outlet from the gas outlet”.

The “first reactant inlet” is (112). The “liquid outlet” is (120). The “gas outlet” is not numbered, but labeled with an arrow and H_2 at the top of figure 9. The “substantially gas permeable/substantially liquid impermeable structure” is (106) and there separates the first reactant inlet (112) and the liquid outlet from (120) the gas outlet” which is not numbered, but labeled with an arrow and H_2 at the top of figure 9.

Claims 55-62

Applicant argues that Hockaday has a pair of gas outlets, not the single gas outlet claimed.

Firstly, it is noted that the claims use the transitional phrase of “comprising”. The transitional term “comprising”, which is synonymous with “including,” “containing,” or “characterized by,” is inclusive or open-ended and does not exclude additional, unrecited elements or method steps. MPEP 2111.03.

Secondly, applicant has selected a single embodiment with which to present this argument. As seen in figure 9, only a single gas outlet is illustrated, not numbered, but labeled with an arrow and H_2 at the top of figure 9.

Conclusion

3. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexa D. Neckel whose telephone number is 571-272-1446. The examiner can normally be reached on Monday - Thursday from 9:00 AM - 7:30 PM.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Alexa D. Neckel
Primary Examiner
Art Unit 1764

May 25, 2006


ALEXA DOROSHENK NECKEL
PRIMARY EXAMINER